

Risk Management – An Introduction

FAMILY GOVERNANCE ASSOCIATES

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What is Risk ?

- Risk is a situation involving danger and uncertain outcomes
- Risk is an uncertain event or condition that if it occurs, has an effect on at least one objective or actor
- Risk is the probability or threat of quantifiable damage, injury, liability, loss, or any other negative occurrence that is caused by external or internal vulnerabilities, and that may be avoided through preemptive action.
- In Finance - Risk is the probability that an actual return on an investment or activity will be lower than the expected return.

Business risks generally grouped in 4 categories

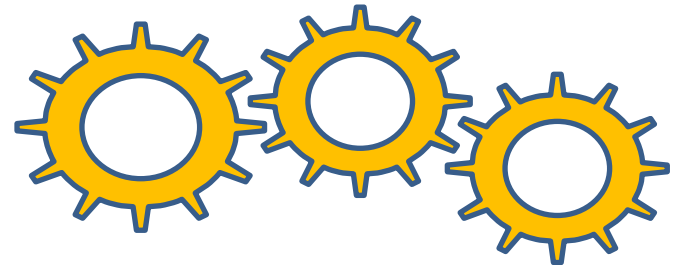
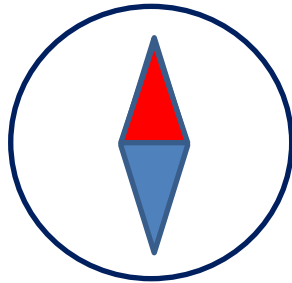
From financial hedging perspective focus is on
Operational and Financial risks



Every company needs risk management

- Risk can affect a company's

STRATEGY



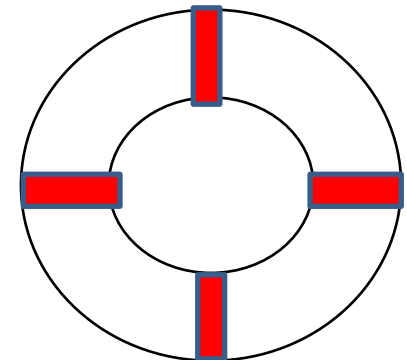
OPERATIONS



PROSPERITY



FINANCES



SURVIVAL

What is risk management ?

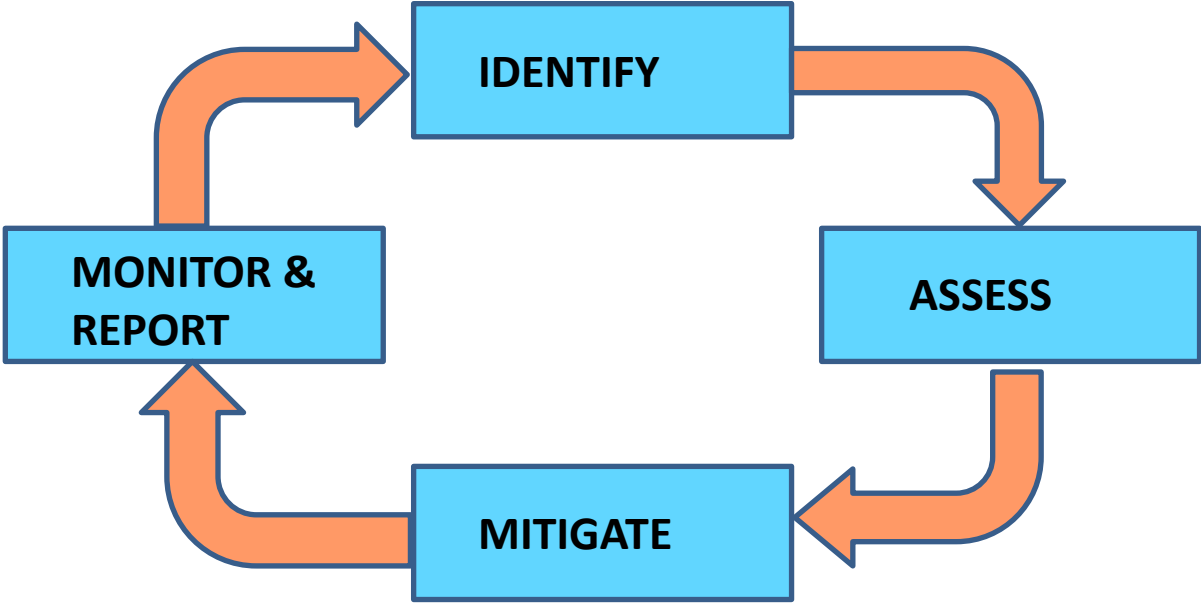
Risk management is the discipline via which companies

- Identify risks
- Assess and analyze risks
 - Likelihood
 - Impact/consequences
- Plan and implement mitigation measures
 - Accept and self insure
 - Transfer of risk
 - Avoid via changing policies, products, etc.
- Monitor, measure and report effectiveness of risk mitigation actions

Risk Management is a continuous process

- New products
- External events
- Acquisitions
- Business process changes

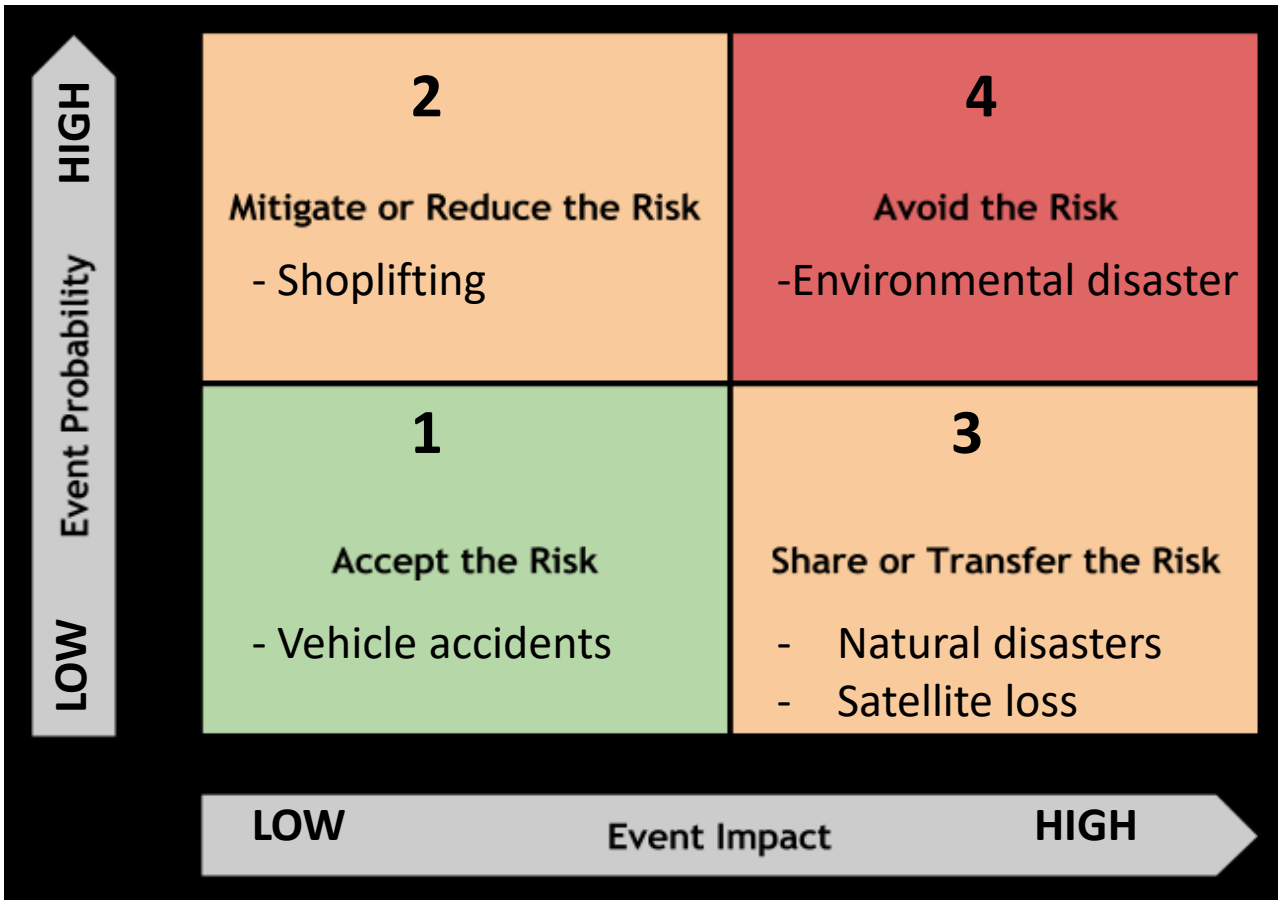
- KPIs
- Loss data
- Issue resolution
- Risk Appetite



- Likelihood
- Impact
- Inherent
- Residual

- Avoid
- Transfer
- Mitigate by controls
- Accept residual risk

Risk management calls for management decisions on risk



1 : LITTLE NEED for action

2 : PREVENTION e.g Training

3 : REDUCTION e.g. plans, fast action

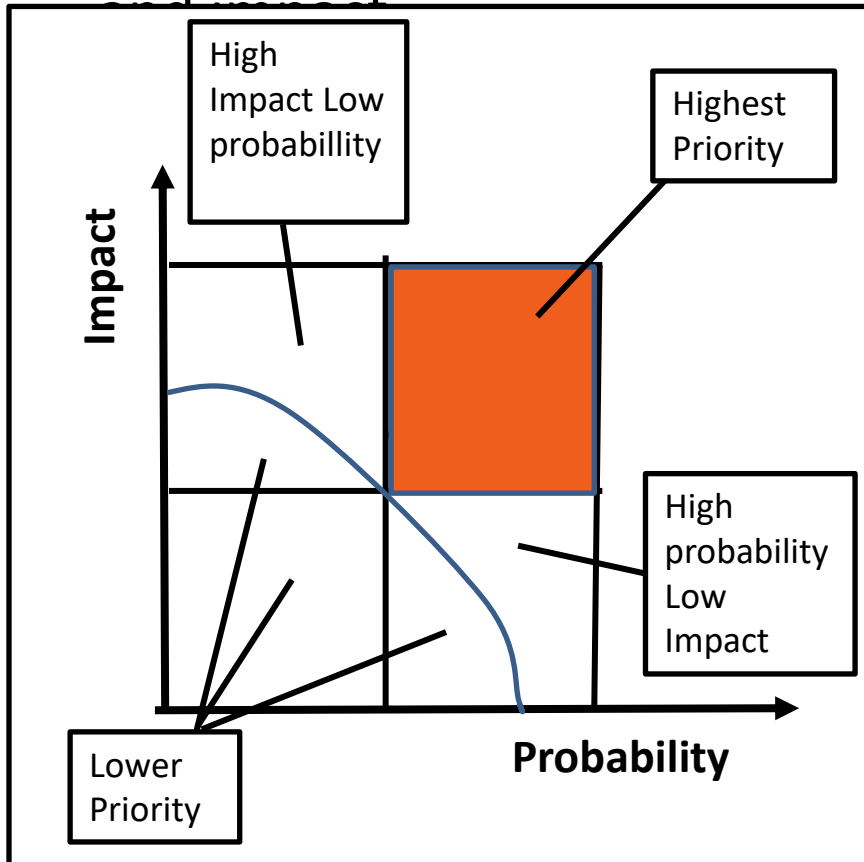
4 : AVOID, ABANDON, REDESIGN

Risk Management Matrix = a Risk Management Tool

- What is it ? (p.10)
- How to construct and use it ? (p.11-13)
- Benefits from using it (p.14)
- Limitations in its use (p.15-16)

Risk Management Matrix

- A tool for mapping risks and prioritizing the ones that deserve management attention given the combination of their likelihood



Impact	Risk Management Actions		
Significant	Considerable Management Effort Required	Must Manage And Monitor Risks	Extensive Management Effort Required
Moderate	Risks may be worth accepting with monitoring	Management Effort Worthwhile	Management Effort Required
Minor	Accept Risks	Accept but Monitor Risks	Manage And Monitor Risks
	Low	Medium	High
	Probability		

How to construct and use a Risk Management Matrix (1)

- Determine level of granularity by reference to number of risks to be covered
- Define risks using CASE tool
 - **Consequence** – what is the impact of this risk ?
 - **Asset** – what asset(s) are at risk ?
 - **Source** – what are the hazards or threat actors behind this risk ?
 - **Event** – what particular type of incident is being considered ?
- Consequence ratings (example)

	Insignificant	Negligible	Moderate	Extensive	Significant
Property	Minor damage or vandalism	Minor damage or loss of <5% of total assets	Damage or loss of <20% of total assets	Extensive damage or loss of <50% of total assets	Destruction or complete loss of >50% of total assets
Economic	1% of budget	2-5% of annual budget	5-10% of annual budget	> 10% of budget	> 30% of project or annual budget

How to construct and use a Risk Management Matrix (2)

- Likelihood ratings (example)

	Chance	Frequency	Probability
Almost Certain	Occur in most circumstances	Has occurred 9 or 10 times in past 10 years in this organization or circumstances	> 95%
Likely	Will probably occur in most circumstances	Occurred more than 7 times over 10 years in this organization or in other similar organizations or circumstances have such that it is likely to happen in the next few years	> 65%
Possible	Might occur at some time	Has occurred in this organization 3 times in past 10 years or occurs regularly in similar organizations or has reasonable likelihood of occurring in the next few years	> 35%
Unlikely	Could occur some time	Has occurred 2 or 3 times over 10 years in this organization or similar organizations	< 35%
Rare	May occur only in exceptional circumstances	Has occurred or can be reasonably considered to occur only a few times in 100 years	< 5%

Risk Management Matrix granularity

- Combination of consequence (vertical axis in example below) and likelihood descriptors (horizontal axis in example below) creates a risk management matrix
- Mapping risks on the matrix helps identify priorities in need of management attention and decisions

5 x 5 RISK MANAGEMENT MATRIX - EXAMPLE

C O N S E Q U E N C E	5	SIGNIFICANT	6	7	8	9	10
	4	EXTENSIVE	5	6	7	8	9
	3	MODERATE	4	5	6	7	8
	2	NEGLIGIBLE	3	4	5	6	7
	1	INSIGNIFICANT	2	3	4	5	6
			RARE	UNLIKELY	POSSIBLE	LIKELY	ALMOST CERTAIN
			1	2	3	4	5
		LIKELIHOOD					

Benefits from using Risk Management Matrix

- Provide consistency and granularity to risk prioritization
- Encourage and facilitate robust discussion
- Provide a point of focus when assessing risks
- Present complex data concisely and in visually insightful fashion

Limitations of Risk Management Matrix

- Can correctly and unambiguously compare only small fraction of selected pairs of hazards and can assign identical ratings to quantitatively different risks
- Can mistakenly assign higher qualitative ratings to quantitatively smaller risks to the point where with risks that have negatively correlated frequencies and severities, they can lead to worse-than-random decisions
- Can result in suboptimal resource allocation as effective allocation of resources to risk treatments cannot be based on the categories provided by risk matrices
- Categorization of severity cannot be made objectively for uncertain consequences. Assessment of likelihood and consequences and resulting risk ratings require a subjective interpretation and different users may obtain opposite ratings of the same quantitative risks
- Don't include any assessment of timeframes affecting risks as they are a snapshot in time
- Can oversimplify the complexity or volatility of a risk as some risks are relatively static and others can change for better or worse very quickly

Limitations of the limitations

- Prioritizing allocation of resources is not the role of the risk matrix
- Any risk assessment tool can assign identical ratings to quantitatively different risks
- No tool can consistently correctly and unambiguously compare more than a small fraction of hazards
- Risk matrices are designed to provide qualitative or semi-quantitative ordinal information (i.e. relative priority), not mathematically precise data
- If a risk is in the High attention category it requires attention and its relative position within the category (e.g. first Vs fourth) is not likely to be significant
- Inherent limitations of human decision-making under uncertainty processes of human risk perception mean subjective decision-making will always be part of the risk assessment process irrespective of the tool used
- Risk matrices are a tool which support risk informed decisions, not a tool for making decisions
- Risk matrices are a practical tool that is not meant to be used in isolation